

Water Damage Prevention



Community Development

Code Compliance
Property Maintenance
Public Education Series



Maintaining Safe Homes for Owners and Renters:



Water Damage Prevention Education

Workshop Presenter

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Virginia Rates Highest for Home Safety



2015 and 2012 STATE SCORES

State	2015 New Score	2012 Original Report Score
VIRGINIA	95	95
FLORIDA	94	95
SOUTH CAROLINA	92	84
NEW JERSEY	89	93
CONNECTICUT	88	81
RHODE ISLAND	87	78
NORTH CAROLINA	84	81
LOUISIANA	82	73
MASSACHUSETTS	79	87
MARYLAND	78	73
GEORGIA	69	66
NEW YORK	56	60
MAINE	55	64
NEW HAMPSHIRE	48	49
TEXAS	36	18
MISSISSIPPI	28	4
ALABAMA	26	18
DELAWARE	17	17

Healthy Housing and Code Enforcement

Healthy Housing Laws that Work

Creating Effective Implementation & Enforcement Clauses



http://changelabsolutions.org/sites/default/files/Healthy_Housing_Laws_Enforcement_FINAL_20140423.pdf

Owner Education



<https://www.fanniemae.com/content/tool/landlord-guidance.pdf>

http://issuu.com/d2yadah/docs/becoming_a_landlord-_fanniemae/1

Tenant Education

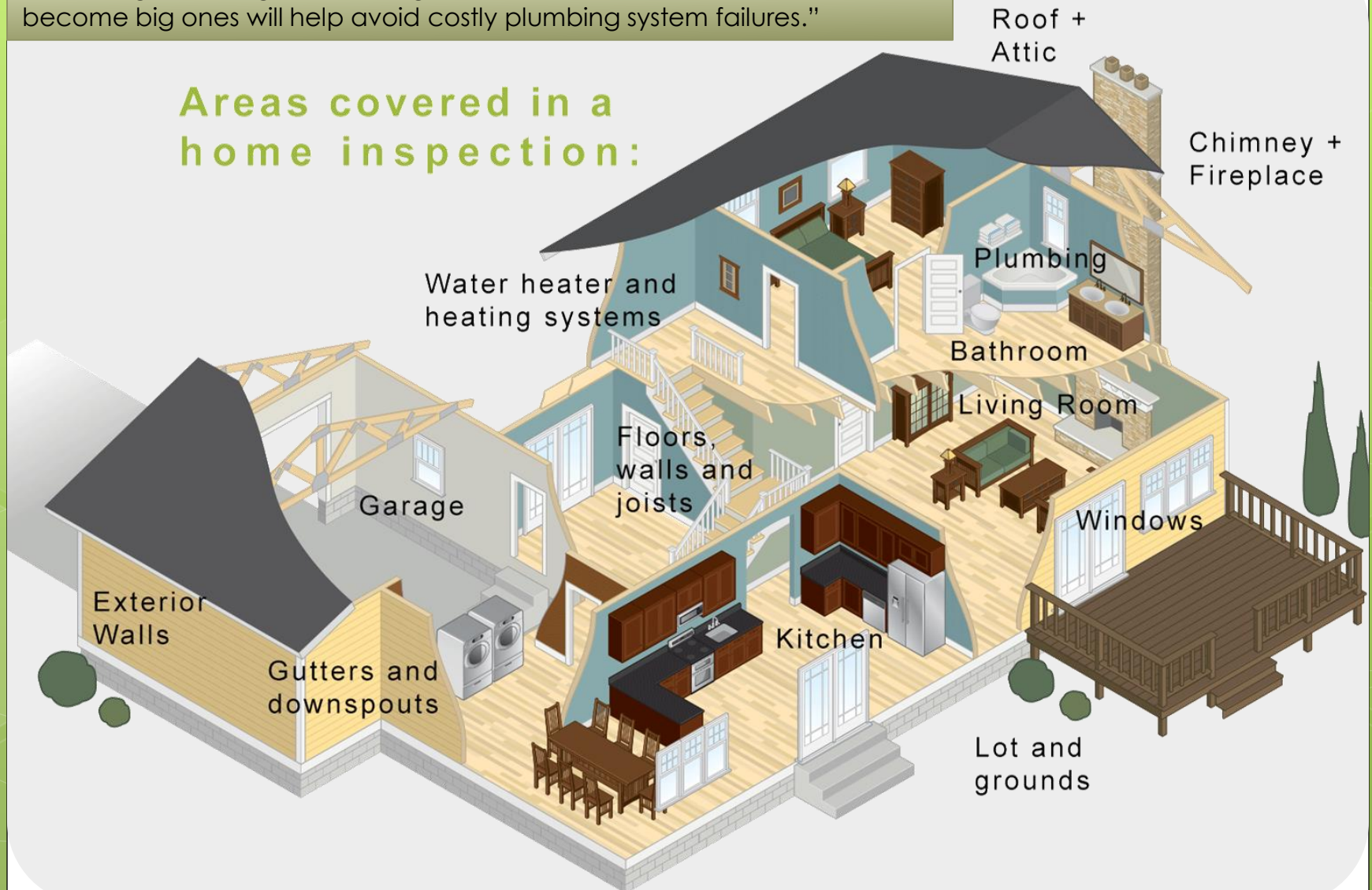


<http://www.valegalaid.org/files/E095B726-FCD8-81C1-17DC-A16C7ED73FFF/attachments/A547C34B-D98B-49AC-ACCA-336AA3EB547F/tenants-rights.pdf>

Water can travel through walls and ceilings causing permanent structural damage to dwellings and erode its strength

"Water damage in a kitchen or bathroom can lead to expensive repairs. Inspecting plumbing and making any necessary repairs before small leaks become big ones will help avoid costly plumbing system failures."

Areas covered in a home inspection:



Find and Fix the Water Source

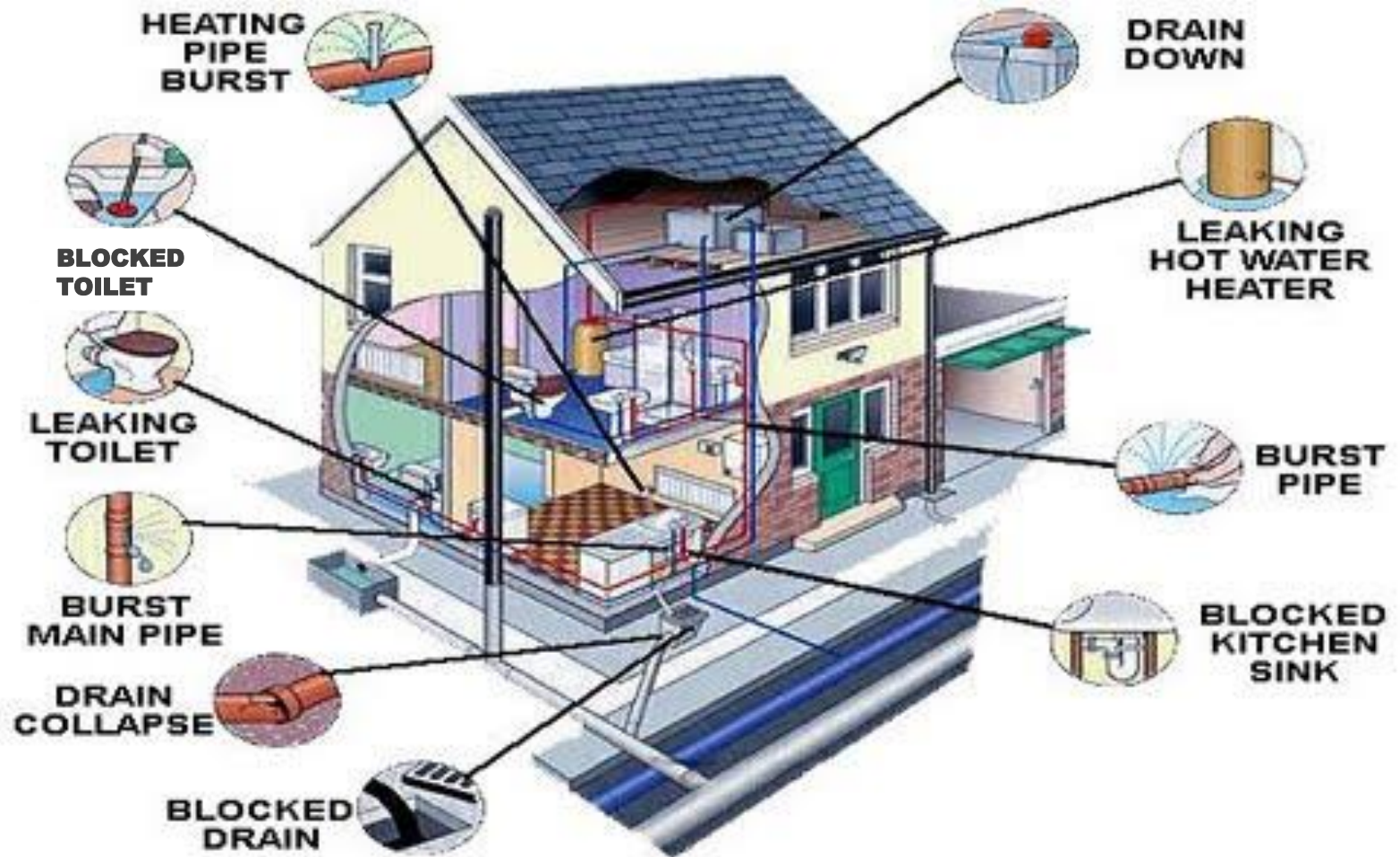
INTERIOR

- Water Heaters
- Pipes Under Sinks
- Leaky Faucets
- Washing Machines
- Dishwasher Leakage
- Icemakers
- Toilets
- Urine
- Showers
- Sump Pumps

EXTERIOR

- Leaking Roof
- Gutters
- Moisture Behind Walls
- Windows And Sills
- Window Air Conditioners
- Fascia Boards
- Foundation Cracks

Common Sources & Causes of Interior Water Infiltration



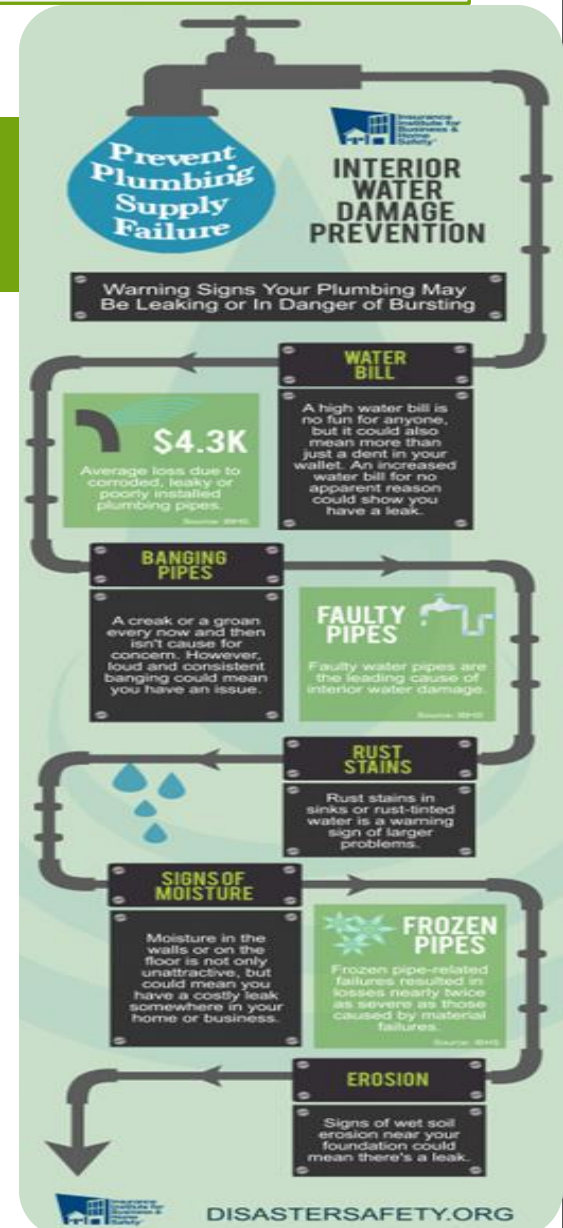
Signs of Water and Moisture Damage

- Rotting of wood
- Growths
- Rusting of steel
- De-laminating of materials such as plywood
- Odors
- Fuzzy, discolored growths
- Stains and discolorations
- Blistering or peeling wall surfaces
- Damaged walls and ceilings
- Damaged floors



Inadequate ventilation can lead to unwanted moisture causing:

- Musty odors
- Rusty stains around light or plumbing fixtures
- Damp/sticky floors
- Mold and mildew growth along ceilings, walls and baseboard edges
- Condensation on walls, ceilings and windows
- Pest or vermin infestation



Water damage can cost thousands of dollars in repairs.

Roof Water Intrusion by Wind Driven Rains and Roof Simulator



<http://disastersafety.org/ibhs-risks-thunderstorms/wind-driven-rain-demo/>



<https://vimeo.com/17299430>

Water damage can cost thousands of dollars in repairs.

Exterior Inspection

Roof

- Missing shingles, erosion, deterioration

Walls, Fascia and Soffits

- Holes, cracks, deterioration

Flashings

- Not secured or missing

Drains

- Clogged

Gutters and Downspouts

- Missing, improper drainage, not secured, holes, cracks



<https://www.youtube.com/watch?v=PWGLD4p3SWU>

Roof-mounted Equipment

- Antennas or satellite dishes

Outside Walls, Doors and Windows

- Peeling paint, holes, rot, mold, pest

Gaps around Windows and Doors

- Condensation, deterioration, peeling paint
- Grade of Property** - Soil should be graded from the foundation so that water flows away from the house during heavy rain or snow.



<https://vimeo.com/127529643>

Interior Plumbing and Water Appliances

***Plumbing Fixtures, Pipes, Drains, Sinks,
Washing Machines & Water Heaters***

- Know where the main water shut-offs in your home are located
- Check the hoses for cracks, kinks, or blisters that are commonly found near the hose connection
- Install reinforced braided stainless steel hoses
- Locate and test the water shut-off valve
- Ensure connections are secure
- Inspect the for dripping or signs of rust and corrosion
- Inspect the plumbing water supply lines every six months

Prevent Water Damage from Toilets

<http://disastersafety.org/ibhs-risks-plumbing/toilet-maintenance/>

- Inspect the flushing mechanism inside the toilet every six months
- After flushing a toilet remain in or near the bathroom to ensure the tank refills properly and does not overflow and/or continue running



Prevent Water Damage from Washing Machines

<http://disastersafety.org/ibhs-risks-plumbing/water-damage-risks-from-a-washing-machine-leaking/>

- Replace rubber hoses with reinforced braided stainless steel hoses
- Do not operate when home is unoccupied



Prevent Water Damage from Plumbing Systems and Drains

<http://disastersafety.org/ibhs-risks-plumbing/preventing-water-damage/>



Showers and Tubs

- Do not leave the room when filling the tub or running the shower

Refrigerators

- Leave 3-4 inch space between the back of the refrigerator and the wall to prevent the hose from crimping



Prevent Water Damage from Water Heaters

<http://disastersafety.org/ibhs-risks-plumbing/water-heater-maintenance/>

- Get an inspection annually.** Don't forget to have a plumbing professional inspect your water heater's shut-off valve and all piping annually. Signs of broken valves and loose or wet joints and rust are a signal that more severe damage is coming.



Helpful Tips Cont.

- Install water shut-off valves on water lines under sinks, toilets, tubs/showers, refrigerators with ice makers, washing machines, hot water tanks, boilers and outside faucets
- Respond quickly to small leaks around sinks, toilets tubs/showers, refrigerators with ice makers, washing machines, hot water tanks, boilers and outside faucets before they become major problems
- Insulate pipes that are located in basements, attics and crawl spaces to avoid freezing
- Consider installing a floor drain when you have your washing machine, hot water tank or boiler located on the upper floors of the dwelling
- Review water bill carefully; a substantial increase could indicate a leak

Ways to Eliminate Excess Moisture

- Use exhaust fans in the bathroom when showering
- Vent dryers to the outside
- Keep inside air circulating with vents and fans to avoid condensation
- Remove excessive clutter of clothes, bags, rubbish, garbage, piles or items from interior and exterior
- Eliminate urine and fecal accidents
- Exterminate pest and vermin



Flood Property Protection

Making Your Building More Flood Resilient



\$8.3 Billion

The average annual
amount of damages from
flooding in the U.S.

Source: National Oceanic and
Atmospheric Administration

Flooding can occur
anywhere, often with
little or no warning.
The following
guidance outlines
proactive steps you
can take to reduce
the risk of a flood
severely damaging
your home or
business.

Protect wells from flood
contamination by having
a licensed contractor
inspect and suggest
safety improvements
for your well.

Direct water away
from your building
by making sure your
yard slopes away
from your home.

Have a licensed
contractor move
HVAC equipment to
an upper floor, or
build a flood-proof
wall around the
equipment.

Make sure your sump
pump is operational
and battery is fully
charged.

Hire a licensed electrician to
raise switches, sockets,
circuit breakers and wiring
at least 12 inches above
expected flood levels.

Anchor fuel
tanks.

Have a licensed
plumber install an
interior or exterior
sewer backflow valve.

Flooding



HGTV <http://videos.hgtv.com/video/hurricane-water-intrusion-0167738>

<http://disastersafety.org/ibhs-risk-flood/reduce-flood-damage-to-homes/>

Flood Risk Scenarios Interactive

Flood Risk Scenarios

Which scenario applies to you?

SNOW MELT FLASH FLOOD NEW DEVELOPMENT DAMS/LEVEES TROPICAL STORM

Winter in the Heartland

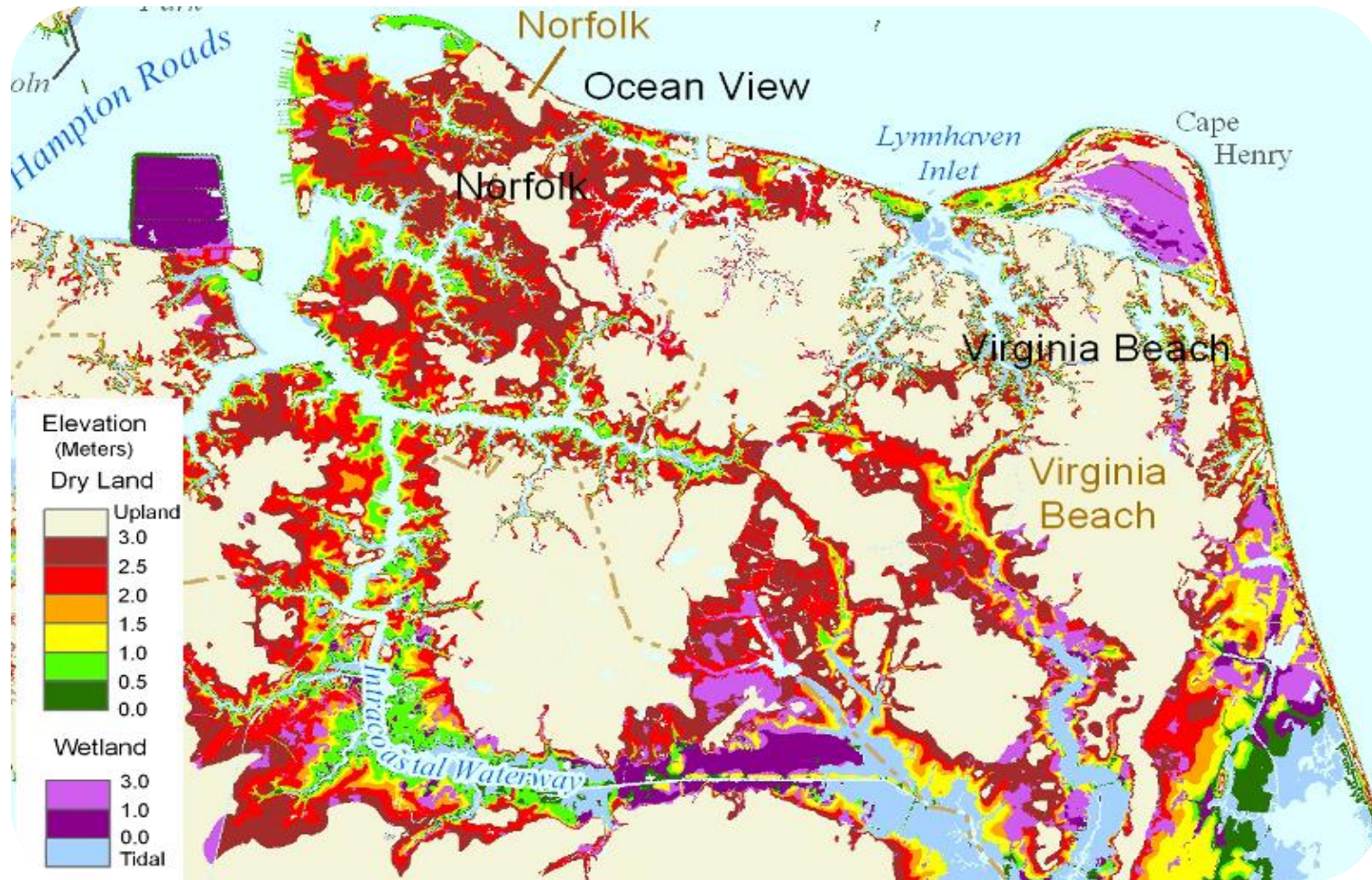


2 His property is exposed to heavy snowfall that accumulates over the winter months.

https://www.floodsmart.gov/floodsmart/flash/main_experience.swf

Flooding Map

Hurricane Flooding and Tidal Surge Map



<http://www.virginiaplaces.org/climate/norfolkdown.html>

from the Hampton Roads Emergency Management Committee

Mold & Moisture Prevention

Most Reported Water Indicator

Mold & Moisture in the Home

Strategies for Local & State Government



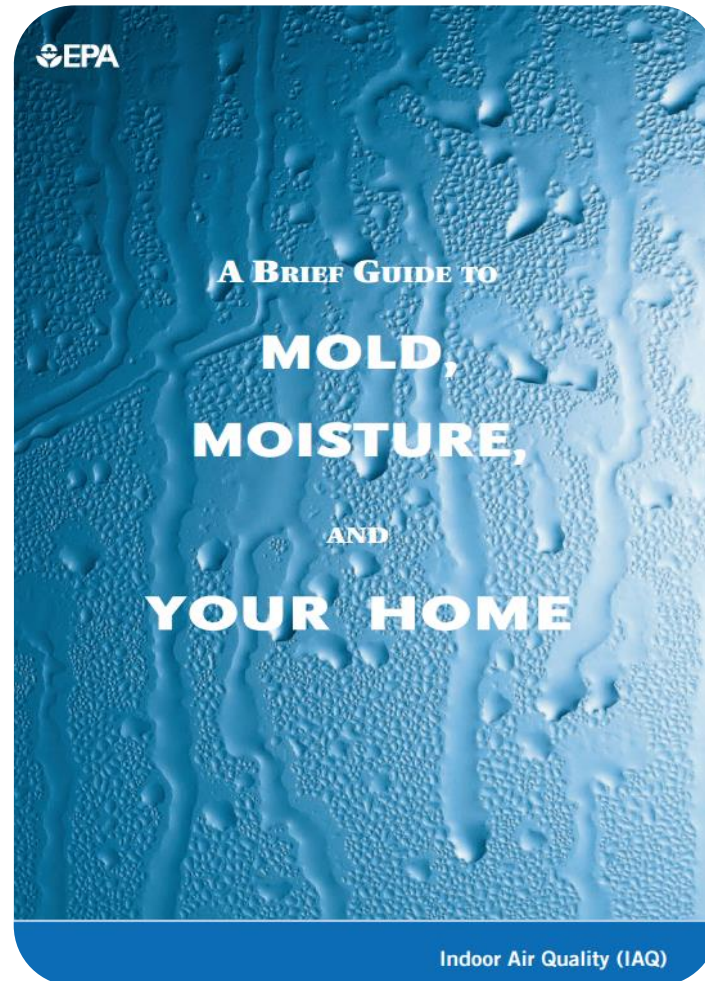
Virginia state law requires landlords and tenants to maintain the premises to prevent the accumulation of moisture and the growth of mold and requires landlords to respond promptly to notifications by tenants of mold or moisture accumulation. If a tenant elects to take possession of a unit notwithstanding presence of mold, the landlord must promptly remediate the condition. Where a mold condition materially affects the health or safety of a tenant, the landlord may require the tenant to temporarily vacate the premises for up to 30 days while the landlord undertakes mold remediation. In such cases, the landlord is required to pay the tenant's relocation costs.

<http://www.dhcd.virginia.gov/images/Housing/Landlord-Tenant-Handbook.pdf>

http://www.changelabsolutions.org/sites/default/files/Mold_&_Moisture_in_the_Home-FINAL-20140421.pdf

Housing Codes, Nuisance, & Enforcement Explicitly Addressing Mold in Housing Codes Construction, property maintenance, and housing codes often address mold indirectly by establishing requirements for building ventilation, drainage and weatherproofing elements, and by requiring interior surfaces be kept in good, clean condition.¹¹ However, in the absence of specific statutory language establishing the presence of mold as a code violation, code enforcement officers may not be empowered to address mold problems. This impediment can be overcome by explicitly identifying the presence of visible mold or mold odor as a violation of state or local codes.

EPA on Mold & Moisture



<http://www.epa.gov/mold/pdfs/moldguide.pdf>

Clean It Up



Clutter Image Rating: Bedroom

Please select the photo that most accurately reflects the amount of clutter in your room.



1



2



3



4



5



6



7



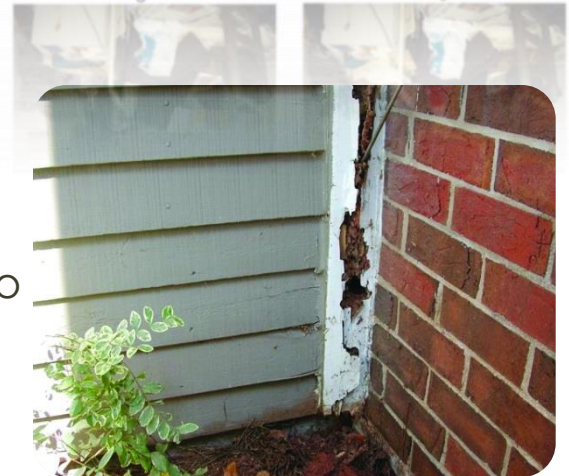
8



9

<http://issuu.com/d2yadah/docs/hoarding OCD scale image with color>

- Clutter inhibits: healthy environmental air quality, proper ventilation, traps moisture, which provides a dark warm environment for organic growths/mold
- Pests – ants, roaches, termites, mice, etc. are able to infiltrate and nest where surfaces have been weakened and deteriorated from moisture and damage



Pests



<https://www.bugs.com/blog/top-5-ways-to-rid-your-home-of-roaches/>

- Cockroaches are attracted to warm and dry places that they can burrow into. Piles of newspapers, mail or magazines are a perfect roach hut. Clutter also provides a desirable shelter and, depending upon where it is located, a source of food. Scrub your house from top to bottom. Get rid of the piles of clutter. Put everything away. Invest in some air-tight sealable containers for food and cooking ingredients. It won't get rid of them completely but it will discourage new roaches from invading when they find that there are very few places to hide.
- **Fabric Softener** Cockroaches do not like fabric softener. **Catnip** is also a natural roach repellent. Sprinkle it around under your sink and in your cabinets and close to your doors.



Termites

Lynchburg Property Maintenance

<http://www.lynchburgva.gov/property-maintenance>

Lynchburg Rental Program

<http://www.lynchburgva.gov/rental-program>

The Benefits of Statewide Building Codes

https://disastersafety.org/wp-content/uploads/Building_Code_insights_2015.pdf

Toilet Failure Risks

<http://disastersafety.org/ibhs-risks-plumbing/toilet-maintenance>

Washing Machine Failure Risks

<http://disastersafety.org/ibhs-risks-plumbing/water-damage-risks-from-a-washing-machine-leaking/>

Water Heater Failure Risks

<http://disastersafety.org/ibhs-risks-plumbing/water-heater-maintenance>

Plumbing Supply System Failure Risks

<http://disastersafety.org/ibhs-risks-plumbing/preventing-water-damage/>

Exterior Window Water Damage YouTube

<https://www.youtube.com/watch?v=PWGLD4p3SWU>

Exterior Window Water Damage YouTube #2

<https://www.youtube.com/watch?v=t5ZC3-dxNo>

Moisture and Mold link 1

<http://www.epa.gov/mold/pdfs/moldguide.pdf>

Moisture and Mold link 2

[http://changelabsolutions.org/sites/default/files/Mold %26 Moisture in the Home-FINAL-20140421.pdf](http://changelabsolutions.org/sites/default/files/Mold%26Moisture%20in%20the%20Home-FINAL-20140421.pdf)

Healthy Housing

[http://changelabsolutions.org/sites/default/files/Healthy Housing Laws Enforcement FINAL 20140423.pdf](http://changelabsolutions.org/sites/default/files/Healthy%20Housing%20Laws%20Enforcement-FINAL-20140423.pdf)

The Benefits of Statewide Building Codes

[https://disastersafety.org/wp-content/uploads/Building Code insights 2015.pdf](https://disastersafety.org/wp-content/uploads/Building_Code_insights_2015.pdf)

The Value and Impact of Building Codes

<http://disastersafety.org/wp-content/uploads/The-Value-and-Impact-of-Building-Codes-by-Ellen-Vaughn-Jim-Turner.pdf>

RATING THE STATES: 2015 ATLANTIC AND GULF COAST STATES MARCH 2015 An Assessment of Residential Building Code and Enforcement Systems for Life Safety and Property Protection in Hurricane-Prone Regions

<http://disastersafety.org/wp-content/uploads/2015/07/rating-the-states-2015-public.pdf>

Moisture and Mold Other Information

http://inspectapedia.com/mold/Cosmetic_Black_Mold.php

10 Mold Prevention Tips for Your Home

<http://www.houselogic.com/home-advice/air-quality/how-to-prevent-mold-damage/>

Clutter Hoarding Scale

http://issuu.com/d2yadah/docs/hoarding_oed_scale_image_with_color

Bed Bugs: Virginia Legal Aid FAQ <http://www.valegalaid.org/resource/bed-bugs-in-rental-housing?ref=F0eWI>

Virginia Residential Landlord and Tenant Act 2014

<http://www.dhcd.virginia.gov/images/Housing/Landload-Tenant-Handbook.pdf>

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<http://www.lynchburgva.gov/terms-use>



Community Development Department of Inspections

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Public Education Series
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